

Appln. No. 09/848,742

Attorney Docket No. 8627-189

I. Listing of Claims

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Currently amended): The medical device (110) according to claim [[1]] 82, wherein the unitarily and continuously formed portion (108) comprises a tubular portion (106).
5. (Cancelled)
6. (Cancelled)
7. (Cancelled)
8. (Original): The medical device (110) according to claim 4, wherein the tubular portion (106) comprises a catheter shaft (111).
9. (Cancelled)
10. (Cancelled)
11. (Cancelled)
12. (Cancelled)
13. (Cancelled)
14. (Cancelled)
15. (Cancelled)
16. (Cancelled)

BRINKS
HOFER
GILSON

Appln. No. 09/848,742

Attorney Docket No. 8627-189

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Currently amended): The medical device (110) according to claim [[19]] 82, [[wherein the unitarily and continuously formed portion (108) comprises at least first and second parts (102 and 104) unitarily and continuously formed with one another, and]] wherein the first and second unitarily and continuously formed parts (102 and 104) of the unitarily and continuously formed portion (108) are exposed to different amounts of cross-linking irradiation.

22. (Currently Amended): The medical device (110) according to claim [[20]] 82, wherein the mixture comprises one of the following ranges: about 1 to about 3 percent by weight of the difunctional material; about 0.5 to about 1.5 percent by weight of the trifunctional material; [[or]] 0.5 to about 1.5 percent by weight of the aromatic molecule[[containing at least two ring substituents, each of the ring substituents having labile hydrogens at a benzylic site therein]]; [[or]]and about 0.01 to about 1 percent by weight of the tetrafunctional material.

23. (Currently amended): The medical device (110) according to claim [[19]] 82, wherein the unitarily and continuously formed portion (108) comprises an amount of the at least one cross-linking reactant sufficient to give the unitarily and continuously formed portion (108) a strength generally about equal to that of a unitarily and continuously formed portion (108) composed of the polyamide elastomer and comparably cross-linked by irradiation, but in the absence of any cross-linking reactant, agent or promoter.

24. (Currently amended): The medical device (110) according to claim [[19]] 82, wherein [[the unitarily and continuously formed portion (108) comprises a

BRINKS
HOFER
GILSON

Appin. No. 09/848,742

Attorney Docket No. 8627-189

mixture of the polyamide elastomer and]] the at least one cross-linking reactant which has been cross-linked, at least in part, by irradiation with an electron beam or with ultraviolet, X- or gamma rays.

25. (Currently amended): The medical device (110) according to claim [[19]] 82, wherein [[the unitarily and continuously formed portion (108) comprises a mixture of the polyamide elastomer and]] the at least one cross-linking reactant which has been cross-linked, at least in part, by exposure to about 0.5 to about 60 megarads of radiation.

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Currently amended): The medical device (110) according to claim [[19]] 82, wherein the mixture comprises at least one polyamide elastomer selected from the class consisting of polyester amides, polyether ester amides and polyether amides.

30. (Original): The medical device (110) according to claim 29, wherein the mixture comprises a nylon block copolymer.

31. (Original): The medical device (110) according to claim 30, wherein the mixture comprises a nylon block copolymer including polyether blocks separated by polyamide blocks.

32. (Currently amended): The medical device (110) according to claim [[19]] 82, wherein the unitarily and continuously formed portion (108) comprises [[an irradiation cross-linkable mixture of a polyamide elastomer and]] about 0.5 percent to about 5 percent by weight of at least one additional cross-linking reactant, the cross-linking reactant comprising triallyl cyanurate or triallyl isocyanurate.

BRINKS
HOFFER
GILSON

Appin. No. 09/848,742

Attorney Docket No. 8627-189

33. (Cancelled):

34. (Cancelled):

35. (Currently amended): The medical device (110) according to claim [[19]] 82, wherein the mixture comprises: a nylon block copolymer including polyether blocks separated by polyamide blocks, about 3 percent by weight triallyl isocyanurate and about 10 percent by weight nylon.

36. (Cancelled)

37. (Cancelled)

38. (Cancelled)

80. (New): A medical device (110) comprising:

a unitarily and continuously formed portion (108) having a varying durometer, the unitarily and continuously formed portion (108) including an irradiation cross-linkable mixture of a polyamide elastomer and at least one additional cross-linking reactant, the cross-linking reactant selected from the group consisting of:

(a) a difunctional material selected from the class consisting of diallyl adipate; diallyl carbonate; diallyl maleate; diallyl succinate; diallyl tetrabromophthalate; diethyl diallylmalonate; dimethyl diallylmalonate; and 2,2,6,6 tetra-bromobisphenol A diallyl ether;

(b) a trifunctional material selected from the class consisting of 2, 5-diallyl-4, 5-dimethyl-2-cyclopenten-1-one; diallyl fumarate; diallyl itaconate; 1, 3, 5-triallyl-2-methoxybenzene; triallyl trimesate (triallyl 1, 3, 5-benzenetricarboxylate); triallyl trimellitate (triallyl 1, 2, 4-benzenetricarboxylate); and pentaerythritol triallyl ether;

(c) a tetrafunctional material selected from the class consisting of tetraallyl cis,cis,cis,cis-cyclopentane-1,2,3,4-tetracarboxylate; and N,N,N',N'-tetraallylethylenediamine; and

BRINKS
HOFFER
GILSON
ATTORNEYS

Appln. No. 09/848,742

Attorney Docket No. 8627-189

(d) an aromatic molecule containing at least two ring substituents, each of the ring substituents having labile hydrogens at a benzylic site therein; and wherein the unitarily and continuously formed portion (108) comprises at least first and second parts (102 and 104) unitarily and continuously formed with one another, at least one of the first and second parts (102 or 104) being exposed to cross-linking irradiation,

wherein the mixture comprises an irradiation cross-linkable mixture of a polyamide elastomer and an aromatic molecule containing at least two ring substituents, each of the ring substituents having labile hydrogens at a benzylic site therein, selected from the class consisting of 1,3,5 triethyl benzene; 1,2,4 triethyl benzene; and 1,3,5 triisopropyl benzene.

81. (New): A medical device (110) comprising a unitarily and continuously formed portion (108) having a varying durometer wherein the unitarily and continuously formed portion (108) comprises an irradiation cross-linkable mixture of a polyamide elastomer and at least one additional cross-linking reactant, the at least one cross-linking reactant comprising diallyl phthalate or meta-phenylene dimaleimide, and the mixture comprising about 1 to about 2 percent by weight of the at least one cross-linking reactant.

82. (New): A medical device (110) comprising:

a unitarily and continuously formed portion (108) having a varying durometer and including an irradiation cross-linkable mixture of a polyamide elastomer and at least one additional cross-linking reactant, the cross-linking reactant selected from the group consisting of:

(a) a difunctional material selected from the class consisting of diallyl adipate; diallyl carbonate; diallyl maleate; diallyl succinate; diallyl tetrabromophthalate; diethyl diallylmalonate; dimethyl diallylmalonate; and 2,2,6,6 tetra-bromobisphenol A diallyl ether;

(b) a trifunctional material selected from the class consisting of 2, 5-diallyl-4, 5-dimethyl-2-cyclopenten-1-one; diallyl fumarate; diallyl itaconate; 1, 3, 5-triallyl-2 methoxybenzene; triallyl trimesate (triallyl 1, 3, 5-benzenetricarboxylate); triallyl trimellitate (triallyl 1, 2, 4-benzenetricarboxylate); and pentaerythritol triallyl ether;

BRINKS
HOFFER
GILSON

Appln. No. 09/848,742

Attorney Docket No. 8627-189

(c) a tetrafunctional material selected from the class consisting of tetraallyl cis,cis,cis,cis-cyclopentane-1,2,3,4-tetracarboxylate; and N,N,N',N'-tetraallylethylenediamine; and

(d) an aromatic molecule containing at least two ring substituents, each of the ring substituents having labile hydrogens at a benzylic site therein,

wherein the unitarily and continuously formed portion (108) comprises at least first and second parts (102 and 104) unitarily and continuously formed with one another, at least one of the first and second parts (102 or 104) being exposed to cross-linking irradiation.